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ON THE IDENTITY OF RUBUS CANADENSIS.

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IN 1753 Linnæus in his *Species Plantarum*, page 494, described as follows a *Rubus* to which he gave the specific name *Canadensis*.

6. *Rubus* foliis digitatis denis quinis ternatisque, caule inermi. Habitat in Canada. Kalm.

Caulis subpurpureus. Foliola lanceolata, utrinque nuda, tenuissima, argute serrata. Bractæ lanceolatae. Stipulæ lineares, acutæ.

6. *Rubus* with digitate leaves, in tens, fives, and threes, stem unarmed.

Habitat in Canada. Kalm.

Stem somewhat purple. Leaflets lanceolate, naked on either side, very thin, acutely serrate. Bracts lanceolate. Stipules linear, acute.

For a time authors of American floras included this name evidently not because they knew plants that they referred to such a species, but simply because Linnæus had described it. At length, however, it was used for the common northern edible dewberry. This usage continued till 1898 when Prof. L. H. Bailey, in his *Evolution of Our Native Fruits*, showed that the *R. Canadensis* of Linnæus was an erect, unarmed, glabrous plant. This he learned by examining the original specimens of Linnæus preserved in London.

There he found two sheets. One of these he has figured on page 383. It has on the new cane five long narrow obovate leaflets, long-pointed at each end and very much like those of *R. setosus* Bigelow. The other specimen, unfortunately, he did not figure, but he obtained a good photograph of it, which he has kindly sent to me. This appears to be identical with a plant common in all the elevated parts of Vermont and New Hampshire and not rare generally in the lower sections.

I have now pretty thoroughly explored both states and write with knowledge obtained from personal observation. Specimens of this *Rubus* have been widely distributed under the name of *R. Canadensis* by President Ezra Brainerd and Mr. W. W. Eggleston. The leaflets of this second Linnæan specimen on the new cane are also five in number, narrow, the middle one ovate with rounded base, the side ones oval or slightly ovate, and the basal ones oval. The one fruit branch has a rather short but otherwise typical raceme.

Linnaeus may have had both specimens before him, when he wrote the above description, but there is positive proof that he had the latter. As Dr. Gray has pointed out in Torrey and Gray's *Flora of the United States* in his remarks on *R. Canadensis*, this latter specimen has one of its leaves pressed directly on the top of another, a leaflet covering one petiole so that the two leaves would appear to a person with poor eyesight to be one leaf with ten leaflets. Here Linnaeus undoubtedly got his idea of ten leaflets. The only ternate leaves on either specimen are on the fruit branches. He could get his description of narrow leaflets, lanceolate bracts, and linear stipules from either specimen or from both of them.

This latter form, the *R. Canadensis* described by President Brainerd in RHODORA (2: 23) in 1900, can be found by botanists visiting the White Mountains, where it occurs in great abundance in Pinkham Notch near the entrance to Tuckerman's Ravine on the road from Jackson to Gorham. Those visiting Lake Willoughby will find that though *R. Alleghaniensis* Porter is common at West Burke, it disappears about three miles up toward the lake where *R. Canadensis* has the field to itself.

It has been to me a matter of much interest to know the situation in Canada — that part from which it is to be presumed the specimens of Linnaeus were obtained. Accordingly during the last days of August and throughout September, 1907, I searched for *Rubus* in Canada. No light was obtained from examinations made during the time of the collections in Montreal and Ottawa, but near the headwaters of the Connecticut River in Vermont, New Hampshire and adjacent Canada *R. Canadensis* was abundant. On a trip from Newport, Vermont, to Quebec I found in sheltered places near large rivers some *R. Alleghaniensis* and also occasionally *R. glandicaulis* Blanchard, but the main high-bush blackberry was *R. Canadensis*, exactly the same form which we have in Vermont.

I found it around Sherbrooke, Richmond and Victoriaville, and some at Lyster, which is twenty miles southwest of Quebec. Beyond Sherbrooke all forms of *Rubus* except *R. strigosus* Michx. become rather scarce and people are not troubled with "briars." *R. strigosus*, however, I found as far north as I went. Some peculiar blackberries grew a few miles north of the citadel at Quebec but I found none there that I knew.

From Quebec I took a continuous car-ride to Roberval on Lake St. John. At Lake Edward, eighty miles north of Quebec, while the train was waiting for the hunters to get off, I found a blackberry that has considerable resemblance to the specimen of Linnæus figured by Prof. Bailey, but this was the only one I saw in Canada.

It may be of interest to botanists to know, and it was a great surprise to me to find, that on both sides of the railroad as far as one can see, from Rivière à Pierre Junction to Lake St. John, a distance of about one hundred miles, the land has been burned over so often that nothing grows there apparently except "fire-weeds." There is also a border at least thirty miles wide all around the lake that has had a similar fate. A small tract on the lake at Roberval was cleared on the occasion of the first fire and has escaped that baptism, and here I was able to learn something of the flora of this northern region. I expected to see it as Michaux saw it, and but for fires it would be nearly the same. I found no blackberries here.

At Three Rivers good *R. Canadensis* was found and also at Kazabazua, forty miles north of Ottawa, but *R. Alleghaniensis* is evidently the prevailing species of the immediate valleys of the St. Lawrence and Ottawa rivers from Three Rivers to Ottawa. Crossing into New York at Brockville at the foot of the Thousand Islands, I found very good *R. Canadensis* at Oswego on the Oswego River, and also at Rochester, and at McLean about fifteen miles northeast of Ithaca. Going through the Adirondacks I found it abundant at Fulton Chain, scattering at Saranac Lake and at Lake Placid, and quite abundant from North Elba till I began to descend into the Ausable valley in Keene.

There now seems to be no good reason to doubt that the specimen with oval-ovate leaflets which Linnæus certainly used in writing his description should be regarded as the type of the species and that we know the plant; while his specimen with cuneate leaflets was probably a sport or an intergrade, or possibly a form of limited range. Were

plants similar to this cuneate-leaved form abundant and widespread it would be more uncertain, but even in such a case the blunder of the ten leaflets ought to settle the question of which to regard as *R. Canadensis*.

There are other though probably local forms of unarmed, glabrous, high-bush blackberries. *Rubus Millspaughii* Britton is one, as I tried to show in the American Botanist, Nov., 1904, and *R. amabilis* Blanchard (RHODORA, 8: 173) is another.

R. Canadensis is never absolutely unarmed like *R. triflorus* Richardson. Even in deep shade there are a few small prickles, and in open sun they are often quite noticeable. Neither is the species often perfectly glabrous in every part, as will be seen from the description following.

RUBUS CANADENSIS L., Sp. Pl. 494 (1753). Plants large, erect, pyramidal in outline with stout furrowed stems. Glabrous or slightly pubescent, glandless. Unarmed or with few short prickles. Flowers large and showy on slender pedicels. Leaflets narrow. Fruit rather small, sour, in large, open racemes.

New canes. Stems rather strong, erect, seldom branched, recurved above, 4 to 6 ft. high, 5 to 8 ft. long, dark red, glabrous and glandless, well angled and furrowed. Prickles few, straight, small, nearly or quite wanting in shade, frequently quite noticeable in open sun, very variable; when present a true prickle, rather stout, set perpendicular to the stem and on its angles only. Leaves large, 5 to 8 in. long and wide, 5-foliate, thin, dark green and glabrous on the upper surface, bright green and glabrous or sometimes finely pubescent beneath. Leaflets narrow, long-stalked, taper-pointed, finely and doubly serrate-dentate, the middle one ovate, more than twice as long as wide, rounded at the base; the others oval and narrower in proportion, the side ones slightly rounded at the base and the basal ones cuneate. Petioles and petiolules rather stout, glabrous, nearly unarmed, the petiolule of the middle leaflet on large leaves $1\frac{1}{2}$ inches long, the side ones one-half as long and the basal leaflet short-stalked.

Old canes. Erect as ever, normally pyramidal in outline, the second year's growth consisting of racemes on the upper part of the stem and long, leafy branches resembling new canes below, generally one from each old leaf axil but often two. Axis of long leaf-branches nearly straight, terete, glabrous, generally unarmed. Leaves 3-foliate or some of the outer 5-foliate, resembling those on new canes. Racemes 4 to 7 in. long; axis nearly straight, stout, glabrous or finely pubescent, unarmed; pedicels very slender, set at a great angle to the axis and subtended by small bracts; leaves two or three, of fair size, unifoliate or trifoliate, leaflets generally narrow; flowers 10-15, appearing about the middle of June, large and showy, $1\frac{1}{4}$ to $1\frac{1}{2}$ in. broad, petals oblong,

two-thirds as wide as long; sepals reflexed. Fruit ripening after the middle of August, generally small, short, as wide as long, short-oblong, commonly rather sour.

Abundant as observed by the writer in the higher parts of Vermont and New Hampshire, and in the southeastern townships of the Province of Quebec, and at least occasional in other parts of Canada; occurring also in New York from Rochester to Lake Champlain.

This species is not entirely confined to the high sections, but is occasional near the Connecticut River especially in light shade. Here it is often slightly pubescent and is earlier than in its higher home, but the large flowers, dark green leaves, red, nearly unarmed stems, narrow leaflets and poor fruit are very noticeable. Pubescence on the under side of the leaves and on the inflorescence marks many plants where it is most at home. Some people call it the "sour blackberry" and where it is the only blackberry to be had, people seem to prefer to go without rather than gather it. Nowhere have I seen it thrive better than near the Town House in Stratton, Vt., and on the old turnpike road in the vicinity of the field now marked by a log-cabin where the famous Whig gathering on "Stratton Mountain" was held in 1840 with Daniel Webster as speaker.

The high blackberry situation in Southeastern Vermont is this: Near the Connecticut River the only high blackberry most people know is the long, aromatic *Rubus nigrobaccus* Bailey, an older name for which is *R. Alleghaniensis* Porter which must now be used. As you go west and get into more elevated sections this becomes scarce and another species *R. pergratus* Blanchard (RHODORA, 8: 96) often called the "square blackberry" is sought by berry pickers who call *R. Alleghaniensis* the "long blackberry," "sow-teat" and "sheep-teat." As you get into still higher sections this becomes scarce and *R. Canadensis* which has grown more and more plenty as you advanced has the field to itself.

WESTMINSTER, VERMONT.